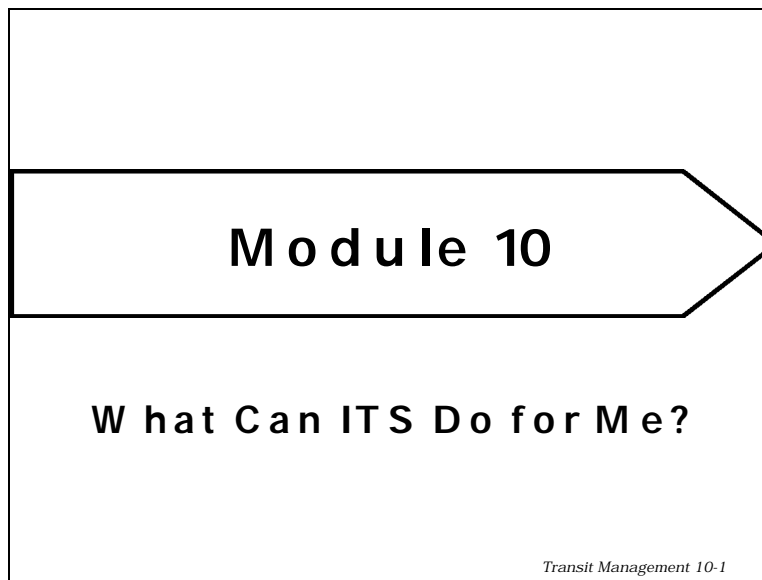


Module 10: What Can ITS Do for Me?



| TRANSIT MANAGEMENT TRAINING ROADMAP | |
|-------------------------------------|--|
| | Module 1: Introduction to ITS and APTS |
| | Module 2: Automatic Vehicle Location Systems |
| | Module 3: Automated Transit Information |
| | Module 4: Transit Telecommunications |
| | Module 5: Transit Operations Software |
| | Module 6: Paratransit Computer-Aided Dispatch |
| | Module 7: Electronic Fare Payment |
| | Module 8: Technologies for Small Urban and Rural Transit Systems |
| | Module 9: Stages of ITS Project Deployment |
| Module 10: What Can ITS Do for Me? | |

Customized Action Plan



Module 10: What Can ITS Do for Me?

Introduction

Slide: Goal

Goal

- To require students to write a preliminary action plan to promote ITS

Transit Management 10-2

Objective

- Given a customized set of course notes, students will write a preliminary action plan to promote ITS for their agency.



Exercise 10-1: Customized Action Plan

In this exercise

You will:

- be able to write a preliminary action plan to promote ITS

Directions

Review all modules' "Custom Course Notes." Summarize on the following page.

Question 1

Rank the modules that we have covered in order of urgency to your agency:

1 = most urgent 7 = least urgent

| TRANSIT MANAGEMENT TECHNOLOGIES RANKING | |
|---|--|
| Ranking | Technology |
| | Module 2: Automatic Vehicle Location Systems |
| | Module 3: Automated Transit Information |
| | Module 4: Transit Telecommunications |
| | Module 5: Transit Operations Software |
| | Module 6: Paratransit Computer-Aided Dispatch |
| | Module 7: Electronic Fare Payment |
| | Module 8: Technologies for Small Urban and Rural Transit Systems |

Continued on next page



CUSTOMIZED COURSE NOTES

| IDEAS | ACTION ITEMS | SOURCES OF INFORMATION |
|-------|--------------|------------------------|
|-------|--------------|------------------------|



Summary—Module 1: Introduction

CUSTOMIZED COURSE NOTES

MY AGENCY: DESCRIPTION

1. Circle the most appropriate choices below that describe your agency.

| | | | | |
|-----------------------------|--|--------------------------|---------------------------|----------------|
| FLEET SIZE | LARGE | MEDIUM URBAN | SMALL SUBURBAN | RURAL |
| OFFICE: | TRANSIT AGENCY FEDERAL | OTHER STATE | LOCAL | |
| SERVICES PROVIDED | BUS PARATRANSIT | SUBWAY OTHER | LIGHT RAIL | TROLLEY |
| SPECIALIZED SERVICES | FIXED ROUTE BUS ROUTE DEVIATION | BUS RAPID TRANSIT | DEMAND RESPONSE | |

CUSTOMIZED COURSE NOTES

2. Fill in your ideas for what actions you will take when you return to your office.

| IDEAS | ACTION ITEMS | SOURCES OF INFORMATION |
|---|--|------------------------|
| <i>For example, do any of these apply to you?</i> | | |
| YES NO Next step – Assess needs | Meet with staff to assess needs | |
| YES NO What is in budget? | Review budget information to see if any ITS projects are scheduled | |
| IDEAS | ACTION ITEMS | SOURCES OF INFORMATION |





Summary—Module 2: AVL

CUSTOMIZED COURSE NOTES

MY AGENCY: DESCRIPTION OF FLEET MANAGEMENT TECHNOLOGIES: AVL

1. Circle the most appropriate choices below that describe your **current** status on AVL systems. Highlight any areas that may interest you in the **future**.

| | | | |
|----------------------|----------------------------|---|---------------------------|
| AVL IMPLEMENTATION: | NONE FULL FLEET | TEST-PHASE | PARTIAL FLEET _____% |
| LOCATION TECHNOLOGY: | GPS SIGNPOST & ODOMETER | DIFFERENTIAL GPS RADIONAVIGATION/RADIOLOCATION | DEAD RECKONING LORAN-C |
| COMBINATION SYSTEM? | Yes / No | | |
| DATA TO DISPATCH: | POLLING | EXCEPTION REPORTING | |
| GIS IMPLEMENTATION: | NONE | TEST-PHASE | IN-PLACE |

2. Check "YES" or "NO" for the situations described below.

SHOULD YOU CONSIDER AVL?

| MY AGENCY'S CHALLENGES ... | YES | NO | PUBLIC PERCEPTION OF MY AGENCY | YES | NO |
|--|-----|----|--|-----|----|
| THE BUSES DON'T RUN ON TIME | | | VEHICLES NOT ON TIME | | |
| BUS BUNCHING | | | VEHICLES DON'T RUN OFTEN ENOUGH | | |
| DRIVER'S WATCH AND DISPATCH NOT SYNCHRONIZED | | | DON'T KNOW WHEN THE NEXT VEHICLE IS ARRIVING/DEPARTING | | |
| CAN'T LOCATE VEHICLES PRECISELY AND QUICKLY IN CASE OF EMERGENCY | | | DON'T KNOW THE SCHEDULE FOR MY RETURN TRIP | | |
| VEHICLES NOT FULL | | | TRANSFERS HAVE TOO MUCH WAITING TIME | | |

| IN THE FUTURE, WE WILL BE IMPLEMENTING: | YES | NO |
|---|-----|----|
| AUTOMATED TRAVELER INFORMATION SYSTEMS | | |
| COMPUTER AIDED DISPATCH (E.G. SCHEDULE ADHERENCE MONITORING, SCHEDULE PLANNING) | | |
| SILENT ALARM | | |
| TRAFFIC SIGNAL PREFERENTIAL TREATMENT | | |
| VEHICLE COMPONENT MONITORING SYSTEMS | | |
| AUTOMATIC PASSENGER COUNTERS | | |
| ELECTRONIC FARE PAYMENT SYSTEMS | | |





CUSTOMIZED COURSE NOTES

3. Read the section below and highlight situations that apply to your agency.

Note: This table is not intended as an all-encompassing resource list, but can help you start to assess AVL system options.

TECHNOLOGY SELECTION HELPER

| LOCATION TECHNOLOGY | GPS | DIFFERENTIAL GPS | SIGNPOST | DEAD RECKONING | RADIO LOCATION | COMBINATION SYSTEM | DATA TO DISPATCH | EXCEPTION REPORTING | POLLING |
|--------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|----------------------------------|-------------------------------------|-------------------------------------|
| URBAN CANYONS | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | LARGE FLEET | <input checked="" type="checkbox"/> | |
| TUNNELS | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | BUSY TELECOM SYSTEM | <input checked="" type="checkbox"/> | |
| WIDE SERVICE AREA | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | NEED TO REDUCE COSTS PER VEHICLE | | <input checked="" type="checkbox"/> |
| FIXED ROUTES THAT WON'T CHANGE | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | |
| SMALL MAINTENANCE BUDGET | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | | | | |

CUSTOMIZED COURSE NOTES

4. Fill in your ideas for what actions you will take when you return to your office.

| IDEAS | ACTION ITEMS | | SOURCES OF INFORMATION |
|--|---------------------------------------|---|---|
| For example, do any of these apply to you? | | | |
| YES NO | I need to find out more from dispatch | Ask about the type and amount of data coming in and going out | |
| YES NO | Is it within budget? | Gather cost information | FTA online Electronic Data Library Update '98 |
| YES NO | AVL is not for me | Decide "no action at this time" | |
| Fill in your ideas here... | | | |
| IDEAS | ACTION ITEMS | | SOURCES OF INFORMATION |



Summary—Module 3: ATIS

CUSTOMIZED COURSE NOTES

MY AGENCY: DESCRIPTION OF ATIS

1. Circle the most appropriate choices below that describe your **current** status on ATIS systems. Highlight any areas that may interest you in the **future**.

| | | | | |
|--|--|-----------------|--|-------------------|
| ATIS IMPLEMENTATION: | NONE | PRE-TRIP | IN-TERMINAL/WAYSIDE | IN-VEHICLE |
| MEDIA: | | | | |
| ELECTRONIC SIGNAGE: | ON-BOARD DISPLAYS AUTOMATED ANNOUNCEMENTS EXTERNAL ANNUNCIATORS | | ON-BOARD ANNUNCIATORS EXTERNAL VARIABLE SIGNS TELEVISION MONITORS | |
| PHONE SYSTEMS: | MANUAL FULL AUTOMATION | | OPERATOR ASSISTED HYBRID AUTOMATED/ HUMAN INTERACTION | |
| REMOTE ACCESS MEDIA: CABLE TV | TOUCH-TONE PHONE INTERNET HAND-HELD DEVICES | | KIOSKS PAGERS | |
| MULTIMODAL SOURCES OF INFO: | BUS OTHER _____ | SUBWAY | RAIL | TRAFFIC |

2. Check "YES" or "NO" for the situations described below.

SHOULD YOU CONSIDER ATIS?

| MY AGENCY'S CHALLENGES ... | YES | NO | PUBLIC PERCEPTION OF AGENCY | YES | NO |
|--|-----|----|---|-----|----|
| HIGH TRAFFIC, SOV IN REGION | | | VEHICLES NOT ON TIME | | |
| TRAFFIC HAS AN ATIS | | | VEHICLES DON'T RUN OFTEN ENOUGH | | |
| MANUAL PHONE SYSTEM HAS HIGH HANGUP RATE /NOT ENOUGH OPERATORS | | | DON'T KNOW WHEN THE NEXT VEHICLE IS ARRIVING/DEPARTING | | |
| CURRENTLY HAVE AVL SYSTEM | | | DON'T KNOW THE SCHEDULES OR ROUTES | | |
| LOCAL LONG-TERM CONSTRUCTION | | | DON'T KNOW WHEN TO GET OFF THE VEHICLE (WHICH STOP IS MY STOP?) | | |
| NEED TO INCREASE SAFETY AND REDUCE TRAVEL TIME | | | NEED A GOOD ROUTE ALTERNATIVE – INFORMATION IS NOT PROVIDED CURRENTLY | | |
| WEATHER CONDITIONS ARE EXTREME | | | | | |
| NEED TO HAVE REAL-TIME INFORMATION | | | | | |



CUSTOMIZED COURSE NOTES

3. Read the section below and highlight situations that apply to your agency.

Note: This table is not intended as an all-encompassing resource list, but can help you start to assess ATIS options.

TECHNOLOGY SELECTION HELPER

| | PRE-TRIP | IN-TERMINAL | IN-VEHICLE | PHONE | KIOSK | INTERNET | CABLE TV | HAND-HELD DEVICES | PAGERS | ELECTRONIC SIGNS | TELEVISION MONITORS | ANNUNCIATORS | ON-BOARD - DISPLAYS |
|--|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| LOW BUDGET | | | | | | <input checked="" type="checkbox"/> | | | | | | | |
| AIDS ADA COMPLIANCE | | | | | | | | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| MULTILINGUAL CAPACITY | | | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | | | | |
| REACHES BROAD AUDIENCE/ MARKETING | <input checked="" type="checkbox"/> | | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | | | |
| ALLOWS CHOICES IN TRANSPORTATION OPTIONS | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | |
| INCREASED CUSTOMER SAFETY – NOT HAVING TO WAIT ON PLATFORMS | | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | | | | | | <input checked="" type="checkbox"/> | | |
| INCREASED CUSTOMER SATISFACTION WITH ACCURATE INFORMATION | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | | | | | | | |
| AUTOMATED INFO FREES DRIVER – INCREASES SAFETY | | | <input checked="" type="checkbox"/> | | | | | | | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| FLEXIBLE LEVELS OF COMMITMENT | | | | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | | | | | | | |



CUSTOMIZED COURSE NOTES

4. Fill in your ideas for what actions you will take when you return to your office.

| IDEAS | ACTION ITEMS | SOURCES OF INFORMATION |
|--|--|---|
| <i>For example, do any of these apply to you?</i> | | |
| YES NO Need to update phone ATIS | buy/plan for pre-trip telephone systems technology | |
| YES NO Can we do Internet? | build an Internet web site with transit information | |
| YES NO | research kiosks | look up cable TV technology on the Internet |
| YES NO Find out more about in-vehicle systems | attend an in-vehicle systems technology course | |
| | ask for an electronic sign demonstration | |
| YES NO What should we do? | meet with your staff to assess Automated Transit Information systems | |
| YES NO ATIS is not for me | decide "no action at this time" | |
| <i>Fill in your ideas here...</i> | | |
| IDEAS | ACTION ITEMS | SOURCES OF INFORMATION |





Summary—Module 4: Transit Telecommunications

CUSTOMIZED COURSE NOTES

MY AGENCY: DESCRIPTION OF TRANSIT TELECOMMUNICATIONS

1. Describe the communications links you use in your agency and how the links are used. Highlight any areas that may interest you in the *future*.

| | | |
|--|--|---|
| WIRELINE COMMUNICATIONS: | NONE | OWNED VOICE/DATA LINES LEASED VOICE/DATA LINES CENTER-TO-CENTER COMMUNICATIONS |
| WIDE AREA WIRELESS COMMUNICATIONS: | NONE SATELLITE | RADIO COMMUNICATIONS CELLULAR PHONES OTHER CELLULAR DEVICES |
| RADIO: | DEDICATED SPECTRUM TRUNKED SYSTEM SPREAD SPECTRUM | CONVENTIONAL MOBILE RADIO SERVICES SHARED SPECTRUM |
| DEDICATED SHORT RANGE COMMUNICATIONS: | NONE | SIGNAL PRIORITY TOLL READERS |
| VEHICLE TO VEHICLE COMMUNICATIONS: | NONE | OTHER _____ |

2. Check "YES" or "NO" for the situations described below.

SHOULD YOU CONSIDER UPGRADING YOUR TELECOMMUNICATIONS SYSTEM?

| MY AGENCY'S CHALLENGES ... | YES | NO |
|---|-----|----|
| CROWDED COMMUNICATIONS NETWORK | | |
| OLD RADIO EQUIPMENT | | |
| CAN'T GET PARTS / MAINTENANCE IS DIFFICULT FOR COMMUNICATIONS EQUIPMENT | | |
| CURRENTLY HAVE 25 Hz CHANNELS IN RADIO SYSTEM | | |
| EMERGENCY SERVICES IN MY AREA ARE CONSOLIDATING TELECOMMUNICATIONS | | |

| WE CURRENTLY HAVE OR WILL BE IMPLEMENTING IN THE FUTURE: | YES | NO |
|---|-----|----|
| AUTOMATIC VEHICLE LOCATION SYSTEMS | | |
| PLANNED UPGRADE TO THE COMMUNICATION SYSTEM | | |
| COMPUTER-AIDED DISPATCH (E.G. SCHEDULE ADHERENCE MONITORING, SCHEDULE PLANNING) | | |
| MOBILE DATA TERMINALS | | |
| SILENT ALARM | | |
| AUTOMATIC PASSENGER COUNTERS | | |
| ELECTRONIC FARE PAYMENT SYSTEMS | | |



CUSTOMIZED COURSE NOTES

3. Read the section below and highlight situations that apply to your agency.

Note: This table is not intended as all-encompassing resources list, but can help you assess telecommunications options.

| TECHNOLOGY SELECTION HELPER | | | | | | |
|-----------------------------|---------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| | | TRUNKED SPECTRUM | SHARED SPECTRUM | SPREAD SPECTRUM | SATELLITE SERVICE | WIRELESS (CELLULAR) |
| | INEXPENSIVE (RELATIVELY) | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> |
| | PROVEN TECHNOLOGY | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| | MULTI-CHANNELS AVAILABLE | <input checked="" type="checkbox"/> | | | | |
| | HIGH VOLUME CAPACITY | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | |
| | USER FLEXIBILITY | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | |
| | HIGH BAND USE EFFICIENCY | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | |
| | TOLERANCE TO INTERFERENCE | | | <input checked="" type="checkbox"/> | | |
| | LICENSING REQUIRED | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | |
| | LIMITED RANGE | | | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> |

4. Fill in your ideas for what actions you will take when you return to your office.

| IDEAS | ACTION ITEMS | SOURCES OF INFORMATION |
|-------|--------------|------------------------|
|-------|--------------|------------------------|

For example, do any of these apply to you?

YES NO We should own our own telecommunications channels and equipment

YES NO We don't have telecommunications specialists on staff Call Joe LoVecchio at Volpe





Summary—Module 5: Transit Operations Software

CUSTOMIZED COURSE NOTES

MY AGENCY: DESCRIPTION OF TRANSIT OPERATIONS SOFTWARE

1. Circle the most appropriate choices below that describe your **current** status on transit operations software. Highlight any areas that may interest you in the **future**.

| | | |
|-------------------------|---|---|
| FIXED ROUTE BUS: | INTELLIGENT VEHICLE LOGIC UNIT AUTOMATIC PASSENGER COUNTER AUTOMATIC VEHICLE IDENTIFICATION | MOBILE DATA TERMINALS GEOGRAPHIC INFORMATION SYSTEM COMPUTER AIDED DISPATCH |
| RAIL: | SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) SERVICE MONITORING ADVANCED RAIL CONTROL | AUTOMATIC TRAIN SUPERVISION |
| CONTROL CENTER: | BUS CONTROL CENTER TRANSIT CONTROL CENTER (BUS & RAIL) TRANSPORTATION CONTROL CENTER (MULTIMODAL) | RAIL CONTROL CENTER TRAFFIC CONTROL CENTER |

2. Check "YES" or "NO" for the situations described below.

SHOULD YOU CONSIDER TRANSIT OPERATIONS SOFTWARE?

| MY AGENCY'S CHALLENGES ... | YES | NO |
|---|-----|----|
| HAVE MANY STAND-ALONE SYSTEMS THAT DON'T EXCHANGE INFORMATION | | |
| HAVE COMPLETED AN OPERATIONAL TEST OF AVL ON PARTIAL FLEET | | |
| NEED MORE ACCURATE DATA ON PASSENGER USAGE | | |
| BUSES ARE NOT ADHERING TO SCHEDULE | | |
| BUSES ARE HARD TO LOCATE IN CASE OF EMERGENCY | | |
| BUS BUNCHING | | |
| NEED TO AUTOMATE STREAMLINE, INTEGRATE FUNCTIONS AND MODES | | |



CUSTOMIZED COURSE NOTES

3. Fill in your ideas for what actions you will take when you return to your office.

| IDEAS | ACTION ITEMS | SOURCES OF INFORMATION |
|---|---|---|
| <i>For example, do any of these apply to you?</i> | | |
| YES NO What do we have at dispatch? | Look at the technology used by your dispatch to determine vehicle location Ride a bus and pay attention to communications between the vehicle operator and dispatch | |
| YES NO What's out there? | Attend an operations software for transit technology course Meet with your staff to assess fleet management software Contact another transit agency to arrange a visit to their transportation control center | Look up Transit Operations Software on the Internet |
| YES NO TOS is not for me | Decide "no action at this time" | |



Summary—Module 6: Paratransit

CUSTOMIZED COURSE NOTES

MY AGENCY: DESCRIPTION OF PARATRANSIT SERVICES

1. Circle the most appropriate choices below that describe your **current** status on Paratransit CAD systems. Highlight any areas that may interest you in the **future**.

| | | | |
|---|---|--|--|
| PARATRANSIT FLEET SIZE: | SMALL BUSES WHEELCHAIR LIFT BUS/VAN | TAXIS | VANS |
| SERVICE AREA: | URBAN | SUBURBAN | RURAL |
| SERVICES PROVIDED: | ROUTE DEVIATION | DEMAND RESPONSE | |
| ADVANCE TRIP SCHEDULING NOTICE (IN HOURS): | _____ | | |
| LEVEL OF AUTOMATION: | NONE | Low | MEDIUM HIGH |
| TECHNOLOGIES: | AVL GIS/ MAPPING SOFTWARE INTERNET ATIS | CAD ON-BOARD MDTs AUTOMATED PHONE SYSTEM | SCHEDULING & DISPATCHING SOFTWARE DYNAMIC REROUTING |

2. Check "YES" or "NO" for the situations described below.

SHOULD YOU CONSIDER PARATRANSIT CAD TECHNOLOGIES?

| MY AGENCY'S CHALLENGES ... | YES | NO | PUBLIC PERCEPTION OF AGENCY | YES | NO |
|--|-----|----|---|-----|----|
| HIGH NUMBER OF NO-SHOWS OR CANCELLATIONS | | | VEHICLES NOT ON TIME | | |
| DON'T HAVE ENOUGH BUSES WITH LIFTS | | | TAKES TOO LONG TO SCHEDULE A RIDE | | |
| COSTS TOO MUCH | | | DIDN'T KNOW SERVICE WAS AVAILABLE | | |
| MANUAL PHONE SYSTEM HAS HIGH HANGUP RATE /NOT ENOUGH OPERATORS | | | STOPS DON'T COME CLOSE ENOUGH TO MY HOUSE | | |



CUSTOMIZED COURSE NOTES

3. Read the section below and highlight situations that apply to your agency.

Note: This table is not intended as all-encompassing resources list, but can help you assess paratransit CAD options.

| TECHNOLOGY SELECTION HELPER | | | | | | |
|-----------------------------|------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| | | SCHEDULING SOFTWARE | MDT | GIS | AVL | ATIS |
| | SCHEDULE ADHERENCE | <input checked="" type="checkbox"/> | | | <input checked="" type="checkbox"/> | |
| | RESCHEDULE NO SHOWS/ REROUTE BUSES | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | |
| | FILL VEHICLES | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| | SCHEDULE ROUTES MORE EFFICIENTLY | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | | |
| | REDUCE PASSENGER WAITING TIME | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | |
| | ACCOUNTING /BILLING AIDS | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | |

CUSTOMIZED COURSE NOTES

4. Fill in your ideas for what actions you will take when you return to your office.

| IDEAS | ACTION ITEMS | SOURCES OF INFORMATION |
|---|---|--|
| <i>For example, do any of these apply to you?</i> | | |
| YES NO | Check out planning software | Other transit agencies Look up scheduling and dispatch technology on the Internet |
| YES NO | Call an AVL or fleet management vendor | |
| YES NO | Attend an ITS technology for paratransit course | |

Fill in your ideas here...

| IDEAS | ACTION ITEMS | SOURCES OF INFORMATION |
|-------|--------------|------------------------|
|-------|--------------|------------------------|





Summary—Module 7: Electronic Fare Payment

CUSTOMIZED COURSE NOTES

MY AGENCY: DESCRIPTION OF FARE PAYMENT

1. Circle the most appropriate choices below that describe your **current** status on fare payment media and systems. Highlight any areas that may interest you in the **future**.

| | | | |
|----------------------------|---|--|-------------------------------------|
| FARE PAYMENT MEDIA: | CASH REUSABLE MONTHLY PASS | TOKEN OTHER PASS: _____ | DISPOSABLE MONTHLY PASS |
| SMART CARD: | MAGNETIC STRIPE HYBRID | CONTACT CHIP | CONTACTLESS (PROXIMITY) |
| PAYMENT SYSTEM: | ALL SYSTEMS SEPARATE | | |
| INTEGRATED SYSTEMS: | BUS/RAIL INTEGRATED PARATRANSIT INTEGRATED | OTHER MODES INTEGRATED BILLING SYSTEMS INTEGRATED | MULTIPLE AGENCIES INTEGRATED |

2. Check "YES" or "NO" for the situations described below.

SHOULD YOU CONSIDER ELECTRONIC FARE PAYMENT?

| MY AGENCY'S CHALLENGES... | YES | NO | PUBLIC PERCEPTIONS | YES | NO |
|---|-----|----|---|-----|----|
| HIGH CASH HANDLING COSTS | | | DON'T LIKE FUMBLING FOR CHANGE | | |
| NEED TO REDUCE FARE EVASION | | | DON'T LIKE HAVING TO PAY FOR THE BUS AND THEN AGAIN FOR THE SUBWAY | | |
| HIGH MAINTENANCE COSTS OF OLD FARE BOXES | | | | | |
| NO ONE BUYS THE MONTHLY PASSES | | | | | |
| HIGH BOARDING TIMES | | | | | |



CUSTOMIZED COURSE NOTES

3. Read the section below and highlight situations that apply to your agency.

Note: This table is not intended as all-encompassing resources list, but can help you assess electronic fare payment options.

TECHNOLOGY SELECTION HELPER

| FARE PAYMENT MEDIA | MAGNETIC STRIPE | CONTACT CHIP CARD | CONTACTLESS CARD | HYBRID CARD |
|-------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| LOW COST PER CARD | <input checked="" type="checkbox"/> | | | |
| HARD TO COUNTERFEIT | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> |
| HIGH RELIABILITY | | <input checked="" type="checkbox"/> | | |
| LONG LIFE OF CARD | | | <input checked="" type="checkbox"/> | |
| EASY TO USE | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> | |
| HIGH SECURITY | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| USER CAN INCREASE \$ VALUE | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| STORES MULTIPLE TYPES OF DATA | | <input checked="" type="checkbox"/> | | <input checked="" type="checkbox"/> |
| HARD TO VANDALIZE READERS | | <input checked="" type="checkbox"/> | | |
| FAST THROUGHPUT | | | <input checked="" type="checkbox"/> | |
| LOW MAINTENANCE OF FARE BOX | | | <input checked="" type="checkbox"/> | |

| INTEGRATED PAYMENT SYSTEM | MULTICARRIER | MULTIMODAL |
|---------------------------------|-------------------------------------|-------------------------------------|
| FLEXIBLE FARE STRUCTURES | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| INCREASED CUSTOMER SATISFACTION | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| LOWER CASH HANDLING COSTS | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| SEAMLESS TRANSPORTATION | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| INCREASED REVENUES FROM "FLOAT" | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

CUSTOMIZED COURSE NOTES

4. Fill in your ideas for what actions you will take when you return to your office.

| IDEAS | ACTION ITEMS | SOURCES OF INFORMATION |
|-------|--------------|------------------------|
|-------|--------------|------------------------|



Summary—Module 8:

Small Urban and Rural Transit Systems

CUSTOMIZED COURSE NOTES

1. Fill in your ideas for what actions you will take when you return to your office.

| IDEAS | ACTION ITEMS | SOURCES OF INFORMATION |
|-------|--------------|------------------------|
|-------|--------------|------------------------|





Summary—Module 9: Stages of ITS

CUSTOMIZED COURSE NOTES

1. Fill in your ideas for what actions you will take when you return to your office.

| IDEAS | ACTION ITEMS | SOURCES OF INFORMATION |
|--|-----------------------------|--------------------------------------|
| <i>For example, do any of these apply to you?</i> | | |
| YES NO There are projects in the TIP that have an ITS component and effect regional ITS integration | Take an Architecture Course | The National ITS Architecture CD-ROM |
| YES NO Who are the stakeholders in my area? | | |

| IDEAS | ACTION ITEMS | SOURCES OF INFORMATION |
|-------|--------------|------------------------|
|-------|--------------|------------------------|

